

REMARKS

Reconsideration of this application, as amended, is requested.

Claims 1 and 4-14 remain in the application. Claims 2 and 3 have been canceled. Claim 1 has been amended to define the invention more clearly and to incorporate limitations that previously were in canceled claims 2 and 3. Dependent claims 4, 6, 7, 10 and 11 also have been amended to define the invention more clearly. Additionally, each of the remaining claims has been amended to eliminate the numeric references. Numeric references are not required under U.S. patent law and are given no patentable weight. Accordingly, the amendments to eliminate numeric references is not a narrowing amendment and is not an amendment entered for purposes of patentability.

Claims 1-3, 5, 6, 9, 11 and 13 were rejected under 35 USC 103(a) as being obvious over Knettle et al., U.S. Patent No. 6,174,020 considered in view of Hu et al., U.S. Patent No. 5,343,989. The Examiner stated that the Knettle et al. reference has "substantially tubular links 46 pivotally connected for bending in a plane." The Examiner further stated that the Knettle et al. reference has a round bundle of cables stacked in the links. The Examiner appears to have acknowledged that Knettle et al. has no suggestion of flat cables. Accordingly, the Examiner turned to the Hu et al. reference in an effort to overcome this deficiency of Knettle et al. The Examiner notes that the Hu et al. reference has flat cables 42 each of which has a plurality of conductors. Accordingly, the Examiner concluded that it would be obvious to combine the flat cable 42 of Hu et al. into the pivotally connected links 46 of Knettle et al. With respect to claim 3, the Examiner asserted that the Knettle et al. reference "stacks the

cables vertically in a round bundle.” With respect to claim 6, the Examiner asserted that FIG. 5 of the Knettle et al. reference has an upper wall with a slit at either side of the numeral 54.

The Knettle et al. reference shows a flexible sheath for accommodating a generally round bundle of wires. The sheath 52 is formed from a plurality of links 54. Each link 54 has opposed sidewalls with round retaining walls 56, 58 as shown in FIG. 5 and with elliptical apertures 60 and 62. A bottom wall extends between bottom edges of the sidewalls of the link 54 and a top wall extends between top edges of the sidewalls. None of the walls of any link have a slit extending therethrough. Thus, it appears that the round wires 50 of Knettle et al. must be threaded through the link. Alternatively, the top wall conceivably could be removed to facilitate insertion of the round bundle of wires 50 and then replaced to provide the complete enclosure for the link 54. Significantly, the Knettle et al. reference requires the retaining walls 56 and 58 to be round while the apertures 60 and 62 are elliptical (col. 4, lines 12-28). The elliptical apertures 60 and 62 engage over the round retaining walls 56 and 58. The shape and diameter of the elliptical apertures relative to the round retaining walls “permits the sheathing 52 to bend transversely relative to the longitudinal axis of the wire track assembly 56.” This “transverse flexibility of the sheathing helps the wire track assembly of Knettle et al. negotiate the required non-linear movement of the wire track assembly as the door of a vehicle moves from an opened position to a close position.” In this regard, the pivoting connection of the sheath 52 in Knettle et al. permits the sheath to be folded in a up-down direction as shown most clearly in FIG. 2 of Knettle et al. while also permitting the

transverse bending required as the door moves from its outward open position to its inward closed position as shown at the extreme left and right ends of FIG. 3.

The Hu et al. reference was cited merely for showing a flat flexible cable used to deliver power or signals to a robotic device that translates linearly in an apparatus. The U-shaped flexible plastic channels that engage the side edges of the Hu et al. flat cable do not appear to be at all relevant to the claimed invention and were not mentioned by the Examiner in the Office Action. The Examiner correctly noted that the Hu et al. reference shows plural flat cables. However, the flat cables of Hu et al. are disposed side-by-side in a single plane.

The Office Action asserts that it would be obvious to a person skilled in this art to replace the round bundle of cables 50 shown in Knettle et al. with flat flexible cables as shown in Hu et al. However, the Knettle et al. reference clearly requires the wire track assembly to be capable of bending in a vertically oriented U-shape as shown in FIG. 2 and to “bend transversally relative to the longitudinal axes of the wire track assembly 46”, as shown in FIG. 3 of Knettle et al. A round bundle of wires 50 as shown in Knettle et al. is capable of bending in a vertically oriented U (FIG. 2 of Knettle et al.) as well as an ability “to bend transversally relative to the longitudinal axes of the wire track assembly” as shown in FIG. 3 of Knettle et al. However, a flat cable, as in Hu et al., is not well suited to the required transverse bending of the wire track assembly 46 of Knettle et al. Accordingly, it is submitted that a person skilled in this art would not be motivated to incorporate the Hu et al. flat cable into the Knettle et al. wire track assembly because the required combination would impede one required movement of Knettle et al. Furthermore, Hu et al. shows plural flat cables arranged side-by-side.

Hence, the hypothetical combination of Hu et al. with Knettle et al. would presumably place the Hu et al. flat cables in a side-by-side disposition. This orientation would further complicate the transverse bending specifically required by the Knettle et al. wire track assembly.

In contrast to the hypothetical Knettle et al./Hu et al. combination, the invention defined by amended claim 1 has a plurality of tubular links “consecutively coupled for bending substantially in a plane about substantially parallel axes.” The links of Knettle et al. clearly are not coupled for bending in a plane, but are specifically coupled for bending in an up-down direction about horizontal axes and for bending transversely to accommodate the horizontal non-linear wire track assembly. Additionally, no reference cited by the Examiner suggests flexible flat cables “stacked in a parallel array.” Thus, the hypothetical combination of these references would require the skilled artisan to ignore problems associated with bending flat cables transversely, as would be required by Knettle et al., and to rearrange the Hu et al. cables from a planer array to stacked array that is not suggested anywhere in Hu et al. Accordingly, it is submitted that the hypothetical combination of these references does not suggest the invention defined by amended claims 1, 5, 6, 9, 11 and 13. Additionally, with respect to claims 6 and 13, there is nothing in Knettle et al. or Hu et al. to suggest a link with a sidewall extending parallel to bending axes of the respective link and having a slit dimensioned for inserting the flat cable into the cable accommodating portion.

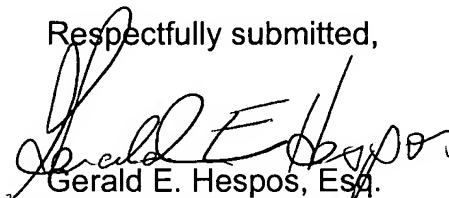
Claims 4, 7, 8, 10, 12 and 14 were rejected under 35 USC 103(a) as being obvious over Knettle et al. in view of Hu et al. and further in view of Kirtland. The Examiner relied upon Kirtland as disclosing a link divided into two spaces.

Kirtland shows a link with a wall extending perpendicular to the bending axes to divide the link into two spaces. At least one round wire is disposed on either side of the partition wall of Kirtland.

Kirtland does not overcome the deficiencies of Knettle et al. and Hu et al. as explained above. Additionally, Kirtland has no suggestion of a "partition extending parallel to the axes" about which the respective lengths articulate.

In view of the preceding amendments and remarks, it is submitted that the claims remaining in the application are directed to patentable subject matter and allowance is solicited. The Examiner is urged to contact applicant's attorney at the number below to expedite the prosecution of this application.

Respectfully submitted,



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